



## **Installation of Apache OpenMeetings 3.3.2 on Centos 7**

This tutorial is made based on fresh installations of

**CentOS-7-x86\_64-LiveGNOME-1503.iso**

It is tested with positive result. We will use the Apache's binary version OpenMeetings 3.3.2 stable, that is to say will suppress his compilation. It is done step by step.

22-9-2017

Please, be connected to Internet in all the process to run any server.

Starting...

**1)**

At first place we must modify Selinux level security for the installation:

```
yum install -y nano
```

```
sudo nano /etc/selinux/config
```

...modify:

```
SELINUX=enforcing
```

...to

```
SELINUX=permissive
```

2)

**----- Update Operative System -----**

Update operative system:

```
yum update -y
```

...and reboot, for kernel changes and the new Selinux configuration take effect:

```
reboot
```

3)

**----- ADD Repos -----**

```
yum install -y wget
```

**EPEL:**

```
wget http://epel.mirror.nucleus.be/7/x86\_64/e/epel-release-7-10.noarch.rpm
```

```
sudo rpm -Uvh epel-release-7*.rpm
```

**## Nux ##**

(Only one line without space between both)

```
rpm -Uvh http://li.nux.ro/download/nux/dextop/el7/x86\_64/nux-dextop-release-0-5.el7.nux.noarch.rpm
```

```
## Adobe repo 64-bit x86_64 ## For Flash player.
```

```
rpm -ivh http://linuxdownload.adobe.com/adobe-release/adobe-release-x86_64-1.0-1.noarch.rpm
```

```
rpm --import /etc/pki/rpm-gpg/RPM-GPG-KEY-adobe-linux
```

```
yum update -y
```

4)

#### ----- Installation of Oracle Java 1.8 -----

Java 1.8 is necessary for OpenMeetings 3.3.2. We install Oracle Java 1.8. Open Java gives an error in some OpenMeetings function. It is tested.

```
cd /opt
```

Download the file:

(All in one line only. 1<sup>a</sup> and 2<sup>a</sup> without space between them. A space to the 3<sup>a</sup>. Together 3<sup>a</sup> and 4<sup>a</sup>)

```
wget --no-cookies --no-check-certificate --header "Cookie: gpw_e24=http%3A%2F%2Fwww.oracle.com%2F; oraclelicense=accept-securebackup-cookie"
http://download.oracle.com/otn-pub/java/jdk/8u144-b01/090f390dda5b47b9b721c7dffa008135/jdk-8u144-linux-x64.rpm
```

...and install it:

```
rpm -ivh jdk-8u144-linux-x64.rpm
```

Maybe you have installed various versions of Java. We select the just installed Oracle Java:

```
update-alternatives --config java
```

And to see if the selected version is active:

```
java -version
```

5)

#### ----- Installation of LibreOffice -----

OpenMeetings will need LibreOffice to convert to pdf the uploaded office files. Install it.

Maybe it is installed, but for iso server:

```
yum -y install libreoffice libreoffice-headless
```

6)

## ----- Installation of necessary packages and libraries -----

Will install packages and libraries we'll need later:

(All in only one line. A space between 1<sup>a</sup> and 2<sup>a</sup>. Together 2<sup>a</sup> and 3<sup>a</sup>)

```
yum install -y libjpeg libjpeg-devel ghostscript freetype freetype-devel unzip gcc gcc-c++ ncurses
ncurses-devel make zlib zlib-devel libtool bison bison-devel openssl-devel bzip2 bzip2-devel file-
roller git autoconf automake pkgconfig tomcat-native nmap vlc
```

7)

## ----- Installation ImageMagick, Sox and Swftools -----

**ImageMagick**, work the images files jpg, png, gif, etc. We install it and some libraries:

```
yum install -y ImageMagick giflib giflib-devel giflib-utils
```

**Sox**, work the sound. Will compile it:

```
cd /opt
```

```
wget http://sourceforge.net/projects/sox/files/sox/14.4.2/sox-14.4.2.tar.gz
```

```
tar xzvf sox-14.4.2.tar.gz
```

```
cd /opt/sox-14.4.2
```

```
./configure
```

```
make && make install
```

**Swftools**. LibreOffice convert the uploaded office files to pdf, and Swftools convert these pdf to swf (flash file), that later will show in the whiteboard. Also convert jpg2swf, png2swf, gif2swf, etc. Don't compile a newer version, surely have not pdf2swf.

```
cd /opt
```

```
wget http://www.swftools.org/swftools-2013-04-09-1007.tar.gz
```

```
tar xzvf swftools-2013-04-09-1007.tar.gz
```

```
cd /opt/swftools-2013-04-09-1007
```

```
./configure --libdir=/usr/lib --bindir=/usr/bin
```

```
make
```

make install

cd /opt

8)

----- Installation of Adobe Flash Player -----

OpenMeetings even need Adobe Flash Player for rooms.

yum install -y flash-plugin

9)

----- Compilation of FFmpeg -----

FFmpeg work with video. Will install a paquets, libraries and vlc to play the recordings.

yum install -y glibc alsa-lib-devel faac faac-devel faad2 faad2-devel gsm gsm-devel imlib2 imlib2-devel lame-devel vorbis-tools theora-tools libvpx-devel vlc autoconf automake cmake freetype-devel gcc gcc-c++ git libtool make mercurial nasm pkgconfig zlib-devel curl

This ffmpeg compilation is based on this url, updated file versions 22-9-2017:

<https://trac.ffmpeg.org/wiki/CompilationGuide/Centos>

I made a script to compile and install ffmpeg on Centos. It is tested and is ok. The result of any recording we do in OpenMeetings, will be in mp4 format. During the x265 compilation, will look like stop for a minutes in a text that say: **41%**, but not always. Don't worry, everything is going right. Be patient.

When is finished, will appear a text:

**FFMPEG Compilation is Finished!**

So, we download the script:

cd /opt

wget <https://cwiki.apache.org/confluence/download/attachments/27838216/ffmpeg-centos2.sh>

...concede execution permission to it:

```
chmod +x ffmpeg-centos2.sh
```

...and run it (be connected to Internet). The compilation will spend about 30 minutes:

```
./ffmpeg-centos2.sh
```

When finish, please, go to **step 10**).

But, if you prefer copy and paste, i **don't advise**, leave the commands script:

```
sudo nano /opt/ffmpeg-centos.sh
```

...copy the green text **from here**:

```
# Script ffmpeg compile for Centos 6.x and Centos 7.x
# Alvaro Bustos. Thanks to Hunter
# Updated 22-9-2017
# Install libraries
yum install -y autoconf automake cmake freetype-devel gcc gcc-c++ git libtool make mercurial
nasm pkgconfig zlib-devel

# Install yasm from repos
yum install -y yasm

# Create a temporary directory for sources.
SOURCES=$(mkdir ~/ffmpeg_sources)
cd ~/ffmpeg_sources

# Download the necessary sources.
curl -#LO ftp://ftp.videolan.org/pub/x264/snapshots/last_stable_x264.tar.bz2
hg clone https://bitbucket.org/multicoreware/x265
git clone --depth 1 git://git.code.sf.net/p/opencore-amr/fdk-aac
curl -L -O http://downloads.sourceforge.net/project/lame/lame/3.99/lame-3.99.5.tar.gz
curl -O http://downloads.xiph.org/releases/opus/opus-1.1.5.tar.gz
curl -O http://downloads.xiph.org/releases/ogg/libogg-1.3.2.tar.gz
curl -O http://downloads.xiph.org/releases/vorbis/libvorbis-1.3.5.tar.gz
wget http://downloads.xiph.org/releases/theora/libtheora-1.1.1.tar.gz
git clone --depth 1 https://chromium.googlesource.com/webm/libvpx.git
git clone --depth 1 git://source.ffmpeg.org/ffmpeg

# Unpack files
for file in `ls ~/ffmpeg_sources/*.tar.*`; do
tar -xvf $file
done
```

```
cd x264-*/  
./configure --prefix="$HOME/ffmpeg_build" --bindir="$HOME/bin" --enable-static && make &&  
make install && make distclean; cd ..
```

```
cd x265/build/linux  
cmake -G "Unix Makefiles" -DCMAKE_INSTALL_PREFIX="$HOME/ffmpeg_build"  
-DENABLE_SHARED:bool=off ../../source && make && make install; cd ~/ffmpeg_sources
```

```
cd fdk-aac  
autoreconf -fiv && ./configure --prefix="$HOME/ffmpeg_build" --disable-shared && make &&  
make install && make distclean; cd ..
```

```
cd lame-*/  
./configure --prefix="$HOME/ffmpeg_build" --bindir="$HOME/bin" --disable-shared --enable-  
nasm && make && make install && make distclean; cd ..
```

```
cd opus-*/  
autoreconf -fiv && ./configure --prefix="$HOME/ffmpeg_build" --disable-shared && make &&  
make install && make distclean; cd ..
```

```
cd libogg-*/  
./configure --prefix="$HOME/ffmpeg_build" --disable-shared && make && make install &&  
make distclean; cd ..
```

```
cd libvorbis-*/  
LDFLAGS="-L$HOME/ffmeg_build/lib" CPPFLAGS="-I$HOME/ffmpeg_build/include"  
./configure --prefix="$HOME/ffmpeg_build" --with-ogg="$HOME/ffmpeg_build" --disable-shared  
&& make && make install && make distclean; cd ..
```

```
cd libtheora-*/  
./configure --prefix="$HOME/ffmpeg_build" --with-ogg="$HOME/ffmpeg_build" --disable-  
examples --disable-shared --disable-sdltest --disable-vorbistest && make && make install; cd ..
```

```
cd libvpx  
./configure --prefix="$HOME/ffmpeg_build" --disable-examples && make && make install &&  
make clean; cd ..
```

```
cd ffmpeg  
PKG_CONFIG_PATH="$HOME/ffmpeg_build/lib/pkgconfig" ./configure  
--prefix="$HOME/ffmpeg_build" --extra-cflags="-I$HOME/ffmpeg_build/include" --extra-  
ldflags="-L$HOME/ffmpeg_build/lib" --bindir="$HOME/bin" --pkg-config-flags="--static"  
--enable-gpl --enable-nonfree --enable-libfdk_aac --enable-libfreetype --enable-libmp3lame  
--enable-libopus --enable-libvorbis --enable-libvpx --enable-libx264 --enable-libx265 --enable-  
libtheora && make && make install && make distclean && hash -r; cd ..
```

```
cd ~/bin  
cp ffmpeg ffprobe ffserver lame x264 /usr/local/bin
```

```
cd ~/ffmpeg_build/bin  
cp x265 /usr/local/bin
```

```
echo "FFMPEG Compilation is Finished!"
```

...to here.

Concede permission of execution:

```
chmod +x /opt/ffmpeg-centos.sh
```

```
cd /opt
```

Now be connected to Internet, run the script and wait some long minutes while the compilation:

```
./ffmpeg-centos.sh
```

Remember the warning about 8 minutes in a false stop...

All the compiled files will be installed in: /usr/local/bin

10)

----- Installation MariaDB data server -----

MariaDB is the database server.

We install it:

```
yum install -y mariadb-server
```

...and run mariadb:

```
systemctl start mariadb.service
```

Give a password to mariadb root . Please, modify **new-password** by your own.

```
mysqladmin -u root password new-password
```

Make a database for OpenMeetings. User password must be of 8 digits minimum:

```
mysql -u root -p
```

...will ask for the root password you does just now:

```
MariaDB [(none)]> CREATE DATABASE open332 DEFAULT CHARACTER SET 'utf8';
```

Now we create a user with all permission on this open332 database.

(Only one line with space between both)



```
MariaDB [(none)]> GRANT ALL PRIVILEGES ON open332.* TO 'hola'@'localhost'
IDENTIFIED BY '1a2B3c4D' WITH GRANT OPTION;
```

```
* open332 ..... name of the database
* hola ..... user for that database
* 1a2B3c4D ..... password of that user
```

You can change the data...but remember it! Later we'll need it. Now we leave MariaDB:

```
MariaDB [(none)]> quit
```

11)

### ----- Installation of OpenMeetings -----

We'll install OpenMeetings in /opt/red5332. All the following information will be based on this directory.

Call to our folder of installation red5332

Make the folder:

```
mkdir /opt/red5332
```

```
cd /opt/red5332
```

...and download the OpenMeetings file:

```
wget http://apache.miloslavbrada.cz/openmeetings/3.3.2/bin/apache-openmeetings-3.3.2.zip
```

```
unzip apache-openmeetings-3.3.2.zip
```

...save the unloaded file to /opt:

```
mv apache-openmeetings-3.3.2.zip /opt
```

Download and install the connector between OpenMeetings and MariaDB:

```
cd /opt
```

(Only one line without space between both)

```
wget http://repo1.maven.org/maven2/mysql/mysql-connector-java/5.1.42/mysql-connector-java-5.1.42.jar
```

...and copy it to where must be:

```
cp /opt/mysql-connector-java-5.1.42.jar /opt/red5332/webapps/openmeetings/WEB-INF/lib
```

Now we are going to configure OpenMeetings for our database in MariaDB:

```
nano /opt/red5332/webapps/openmeetings/WEB-INF/classes/META-INF/mysql_persistence.xml
```

**Modify in line 72:**

```
, Url=jdbc:mysql://localhost:3326/openmeetings_3_3?
```

...to

```
, Url=jdbc:mysql://localhost:3326/open332?
```

...it is the name of the database that we did initially.

Logically if initially you choose another name and password for the database, you will to change them here.

Press **Ctrl+x**, will ask to save, press **Y** and to exit nano press **Enter**.

We protect the access to the file:

(Only one line without space between both)

```
chmod 640 /opt/red5332/webapps/openmeetings/WEB-INF/classes/META-INF/mysql_persistence.xml
```

12)

----- Script to launch red5-OpenMeetings -----

We'll download the script to run red5-OpenMeetings:

```
cd /opt
```

```
wget https://cwiki.apache.org/confluence/download/attachments/27838216/red5-2
```

...copy it to where must be:

```
cp red5-2 /etc/init.d/
```

...concede execution permission:

```
chmod +x /etc/init.d/red5-2
```

If you made the installation in any other different path to /opt/red5332, please edit the script and modify the line:

```
RED5_HOME=/opt/red5332
```

...to

```
RED5_HOME=/your-path-installation
```

13)

### ----- Run red5-OpenMeetings -----

Restart MariaDB:

```
systemctl restart mariadb.service
```

...and run red5-OpenMeetings. Please, be connected to Internet:

```
/etc/init.d/red5-2 start
```

...wait until the text “**clearSessionTable: 0**”, it is the last in the shell. Then, go with the browser to:

<http://localhost:5080/openmeetings/install>

...there will appear a page similar to this one:

**OpenMeetings**

1. **Enabling import of PDFs into whiteboard**

- Install **GhostScript** on the server, you can get more information on <http://pages.cs.wisc.edu/~ghost/> regarding installation. The instructions for installation can be found there, however on most linux systems you can get it via your favorite package managers (apt-get it).
- Install **SWFTools** on the server, you can get more information on <http://www.swftools.org/> regarding installation. Some of the Linux distributions already have it in there package manager see <http://packages.debian.org/unstable/utils/swftools>, the recommended version of **SWFTools** is 0.9 as prior version have a bug that does lead to wrong object dimensions in the Whiteboard

**If you have further questions or need support in installation or hosting:**


**Community-Support:**

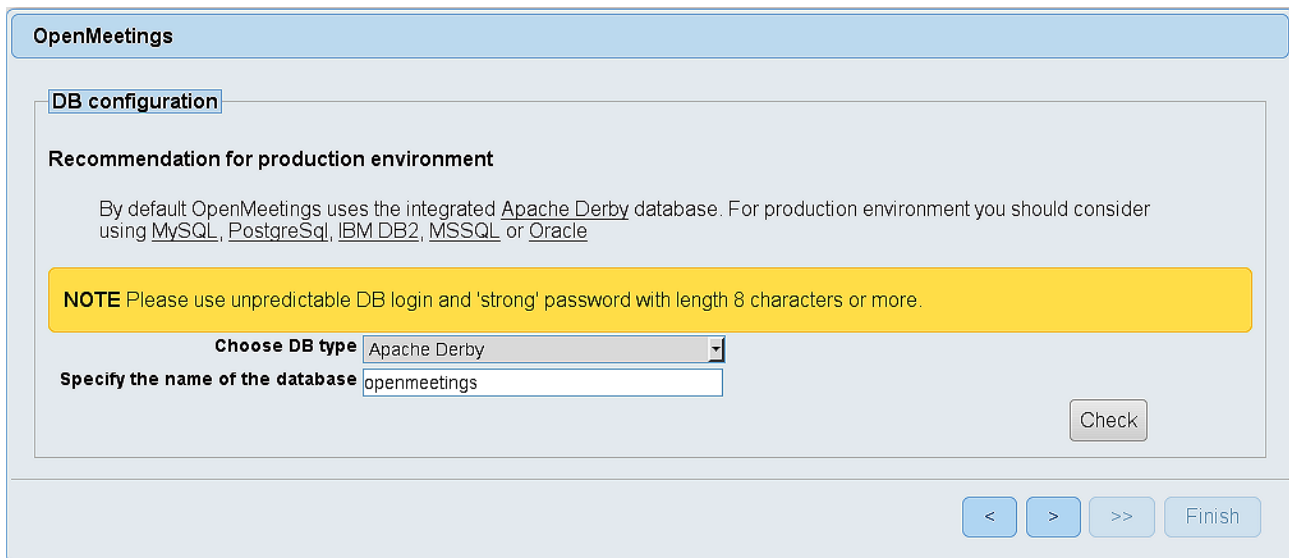
[Mailing lists](#)

**Commercial-Support:**

[Commercial-Support](#)

<
>
>>
Finish

...push on  (bottom), and will show the default database configuration with Derby, but we employ MySQL (MariaDB):



**OpenMeetings**

**DB configuration**

**Recommendation for production environment**

By default OpenMeetings uses the integrated Apache Derby database. For production environment you should consider using MySQL, PostgreSQL, IBM DB2, MSSQL or Oracle

**NOTE** Please use unpredictable DB login and 'strong' password with length 8 characters or more.

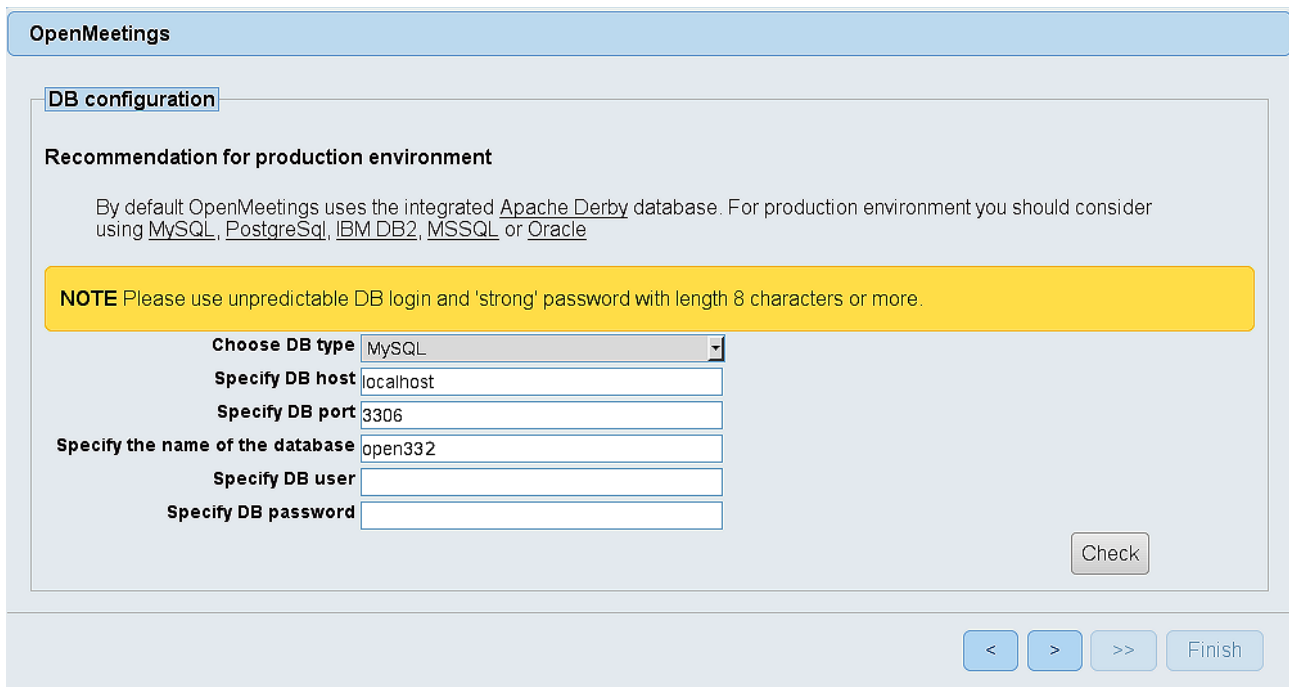
**Choose DB type** Apache Derby

**Specify the name of the database** openmeetings

Check

< > >> Finish

...so, scroll and **Choose DB type** to MySQL:



**OpenMeetings**

**DB configuration**

**Recommendation for production environment**

By default OpenMeetings uses the integrated Apache Derby database. For production environment you should consider using MySQL, PostgreSQL, IBM DB2, MSSQL or Oracle

**NOTE** Please use unpredictable DB login and 'strong' password with length 8 characters or more.

**Choose DB type** MySQL

**Specify DB host** localhost

**Specify DB port** 3306

**Specify the name of the database** open332

**Specify DB user**

**Specify DB password**

Check

< > >> Finish


...will show the database name we made in step 11.

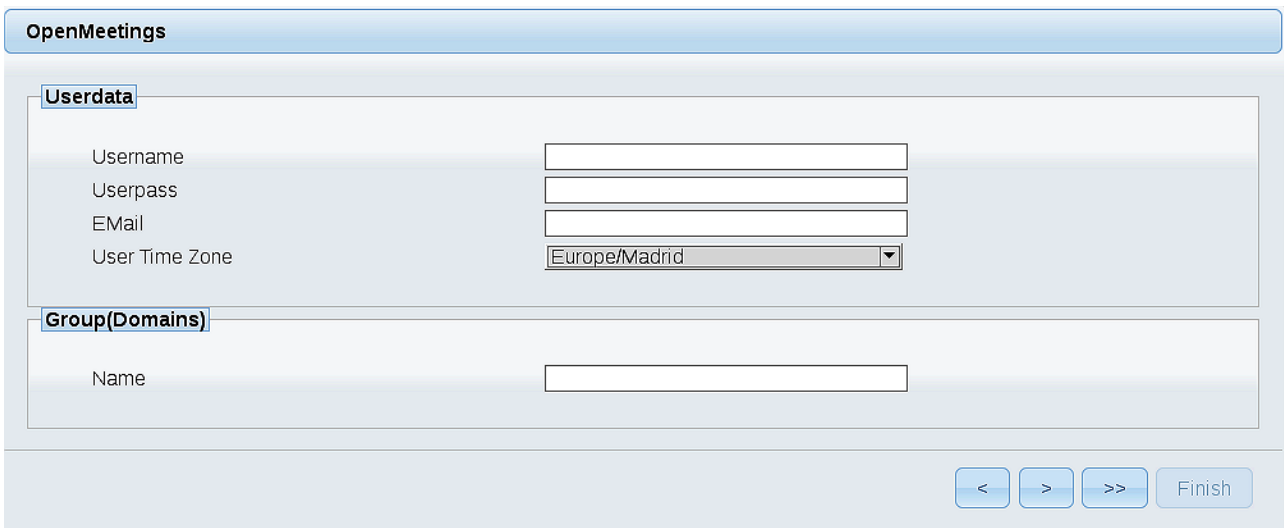
If you`ve choose any other different name for this, will show equally.

Now we must introduce the user name we did for our database, at the step 8, and his password:

**Specify DB user** = **hola**

**Specify DB password** = **1a2B3c4D**

Please, press  button and will go to:



Here, we must introduce a user name for OpenMeetings, and his password. This must have 8 digits minimum, and at least 1 special symbol like: +(%#!...etc.


**Username** = a-name ...this user will be administrator.

**Userpass** = a-password ...for the previous user.

**Email** = email-adress ...of the previous user.

**User Time Zone** = country where is this server

**Name** = example-openmeetings ...group name to choose.

Press the button  and will lead us to a new page (below) where you can select the language for your OpenMeetings server, as well as other options such as the configuration of the mail server being used to send invitations or meetings from OpenMeetings.

**OpenMeetings**

**Configuration**

Allow self-registering (allow_frontend_register)	Yes <input type="button" value="v"/>
Send Email to new registered Users (sendEmailAtRegister)	No <input type="button" value="v"/>
New Users need to verify their EMail (sendEmailWithVerificationCode)	No <input type="button" value="v"/>
Default Rooms of all types will be created	Yes <input type="button" value="v"/>
Mail-Referer (system_email_addr)	<input type="text" value="noreply@openmeetings.apache.org"/>
SMTP-Server (smtp_server)	<input type="text" value="localhost"/>
SMTP-Server Port(default SmtP-Server Port is 25) (smtp_port)	<input type="text" value="25"/>
SMTP-Username (email_username)	<input type="text"/>
SMTP-Userpass (email_userpass)	<input type="text"/>
Enable TLS in Mail Server Auth	No <input type="button" value="v"/>
Set inviter's email address as ReplyTo in email invitations (inviter.email.as.replyto)	Yes <input type="button" value="v"/>
Default Language	inglés <input type="button" value="v"/>
Default Font for Export [default_export_font]	TimesNewRoman <input type="button" value="v"/>

A valid example to configure the mail server with Gmail, is as follows:  
(replace **john@gmail.com** with your real Gmail account)

**Mail-Refer (system\_email\_addr)** == [john@gmail.com](mailto:john@gmail.com)

**SMTP-Server (smtp\_server)** == [smtp.gmail.com](mailto:smtp.gmail.com)

**SMTP-Server Port (default SmtP-Server Port is 25) (smtp\_port)** == [587](#)

**SMTP-Username (email\_username)** == [john@gmail.com](mailto:john@gmail.com)

**SMTP-Userpass (email\_userpass)** == [password of john@gmail.com](#)

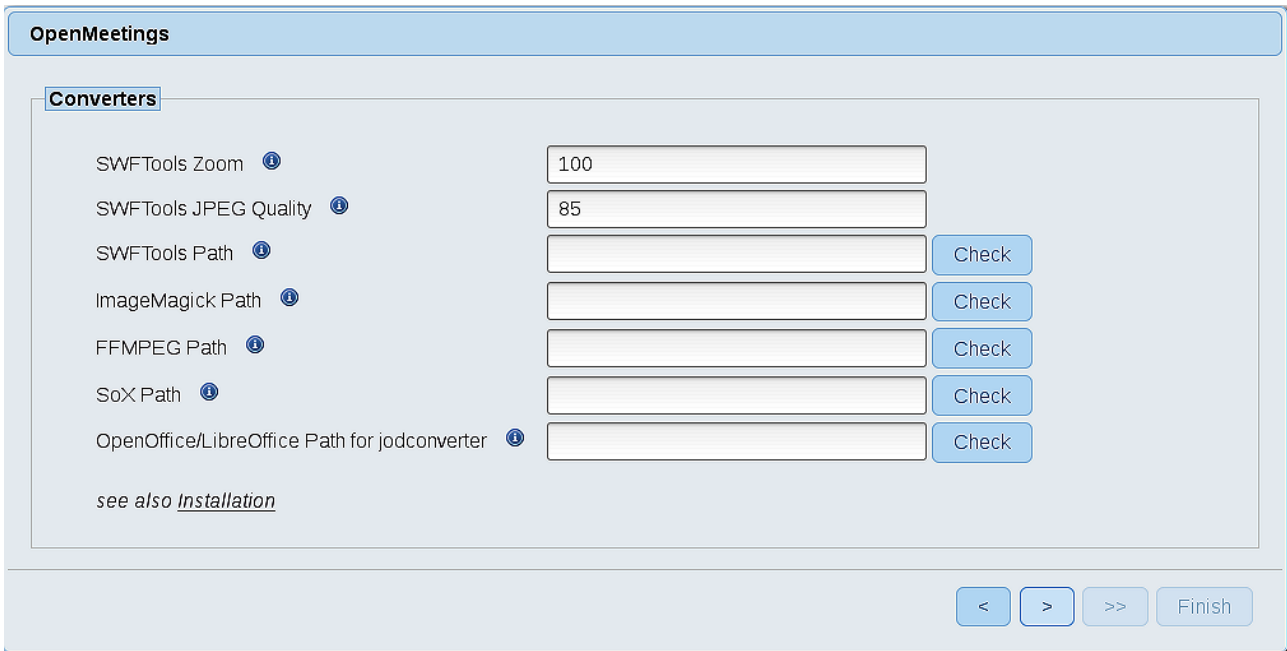
**Enable TLS in Mail Server Auth** == [Yes](#)

To select the language of your server OpenMeetings, please scroll on the line:

**Default Language** = [english](#)

...the rest we can leave as is. If necessary, can modify it as you like it:

Now press the button  and a new page will appear:



**OpenMeetings**

**Converters**

SWFTools Zoom ⓘ

SWFTools JPEG Quality ⓘ

SWFTools Path ⓘ

ImageMagick Path ⓘ

FFMPEG Path ⓘ

SoX Path ⓘ

OpenOffice/LibreOffice Path for jodconverter ⓘ

see also [Installation](#)

< > >> Finish

Here we'll introduce the respective paths for the image, video, audio and conversion of uploaded files:

**SWFTools Path** == [/usr/bin](#)


**ImageMagick Path** == [/usr/bin](#)

**FFMPEG Path** == [/usr/local/bin](#)

**SOX Path** == [/usr/local/bin](#)

**OpenOffice/LibreOffice Path for jodconverter** == [/usr/lib64/libreoffice](#)

As you go introducing paths, you can check if they are correct by pressing the button labeled **Check**. If it does not display any error message, that is OK.

Once completed the paths, please click the  button and move on to another page that would be to activate the SIP. We will leave it as is, unless you want to activate it knowing what it does:

**OpenMeetings**

**Crypt Type**

Crypt Class

*You can use this default crypt type which is equal to PHP-MD5 function or BSD-Style encryption by using: **org.apache.openmeetings.util.crypt.MD5CryptImplementation** for more information or to write your own Crypt-Style see: [Custom Crypt Mechanism](#) You can edit this value later BUT previous created Users and Sessions might be not usable anymore*

**red5SIP Configuration**

Enable SIP

*Enable red5SIP integration*

SIP rooms prefix

*Prefix for phone number of conference rooms*

SIP extensions context

*Context of Asterisk extensions*

Now push the button  Will show this window:

**OpenMeetings**

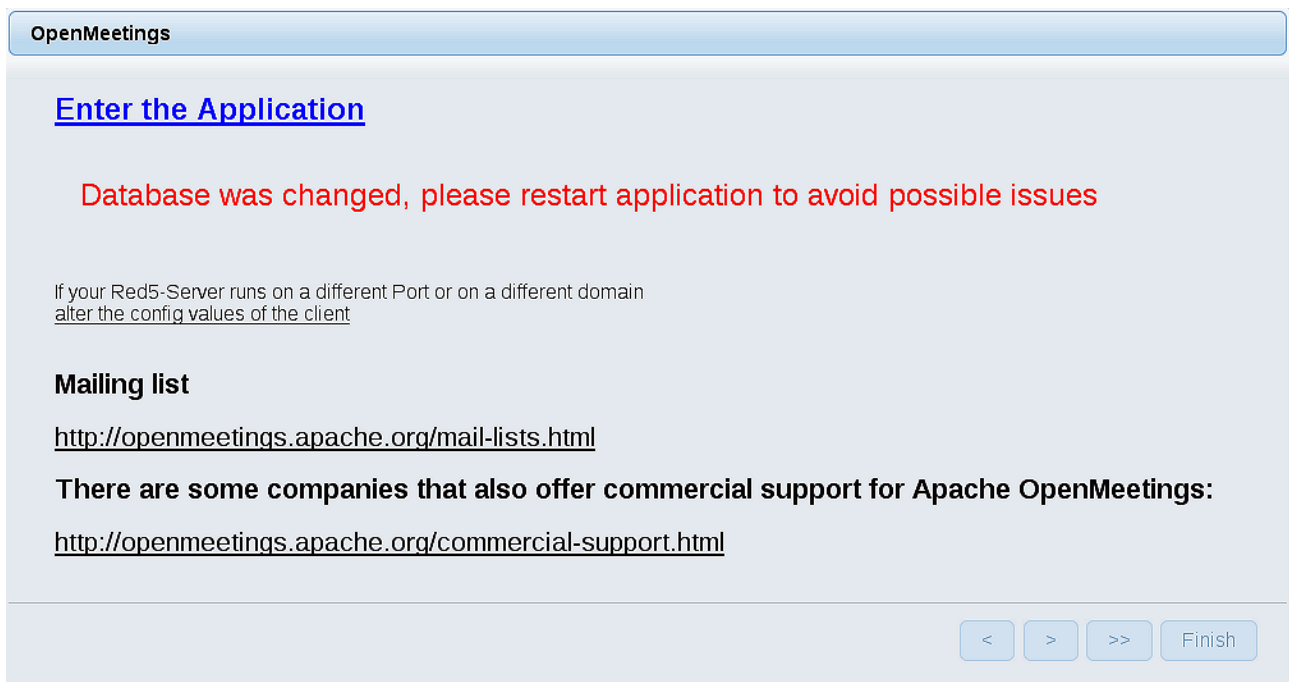
Please click "Finish" button to start installation!

Clic **Finish** button...wait a seconds untill the tables are fill in the database.

When has concluded, this another page will appear. **Don't** clic on [Enter the Application](#). First is need it to restart red5 server. Be connected to Internet:

[/etc/init.d/red5-2 restart](#)





Now yes, you can clic on [Enter the Application](#), or go with your browser to:

<http://localhost:5080/openmeetings>

...and will take us to the entry of OpenMeetings:

The screenshot shows a "Login" form. It has a blue header bar with the text "Login". Below the header, there are two input fields: "Username or mail address" and "Password". To the right of the "Password" field is a checkbox labeled "Remember login". Below the input fields, there are two links: "[Forgotten your password?](#)" and "[Network testing](#)". At the bottom, there are two buttons: "Not a member?" and "Sign in".

Introduce the user's name and the password that you have chosen during the installation, push **Sign in** button, and...

...Congratulations!

The next time that you like to accede OpenMeetings, would be:

<http://localhost:5080/openmeetings>

Remember to open in the server, the two following ports:

1935 5080

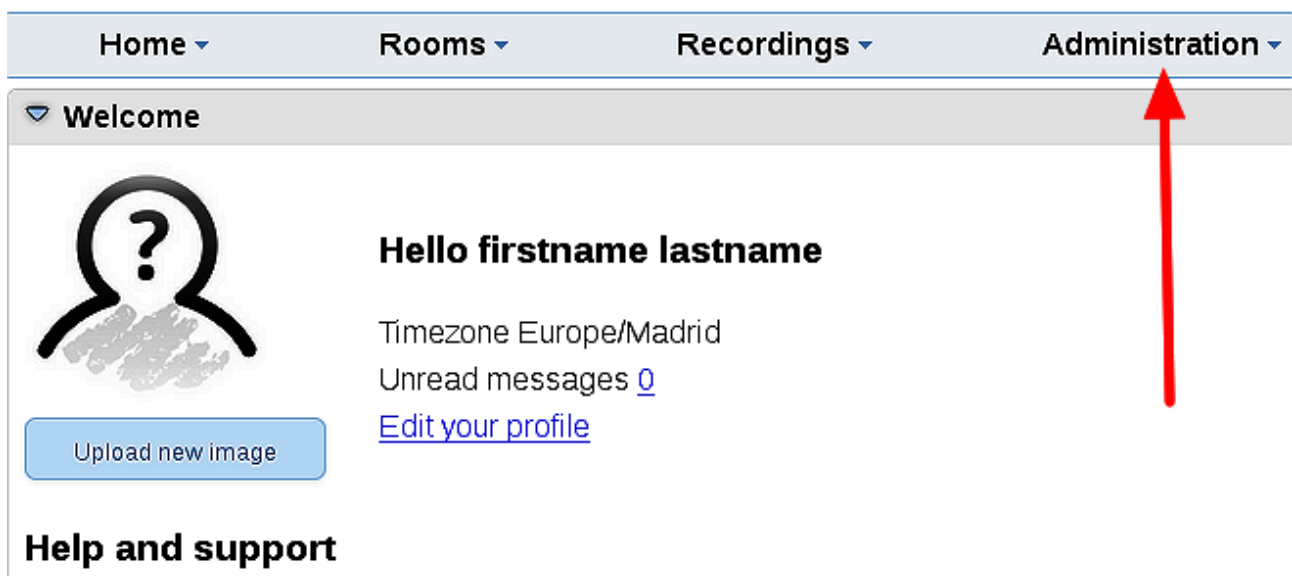
...in order that it could accede to OpenMeetings from other machines in Lan or Internet.

14)

----- OpenMeetings's configuration -----

Once you acced to OpenMeetings, if you would like to do any modification in the configuration, please go to:

Administration → Configuration



...and following the order of the red arrows:

The screenshot shows a configuration management interface. On the left is a table with columns ID, Key, and Value. Row 18 is highlighted. On the right is a 'Configuration' window for the key 'swftools\_path'. Red arrows labeled 1, 2, and 3 indicate the sequence of actions: 1 points to the highlighted row in the table, 2 points to the 'Value' input field in the configuration window, and 3 points to the 'Configuration' window title bar.

ID	Key	Value
4	allow.oauth.register	1
5	default_group_id	1
6	smtp_server	localhost
7	smtp_port	25
8	system_email_addr	noreply@openmeetings.apache.org
9	email_username	
10	email_userpass	
11	mail.smtp.starttls.enable	0
12	mail.smtp.connection.timeout	30000
13	mail.smtp.timeout	30000
14	application.name	OpenMeetings
15	default_lang_id	1
16	swftools_zoom	100
17	swftools_jpegquality	85
18	swftools_path	
19	imagemagick_path	
20	sox_path	
21	ffmpeg_path	
22	office.path	

**Configuration**

Key: swftools\_path

Value:

Last update:

Updated by:

Comment: Path To SWF-Tools

We are going to remove files and folders that already do not serve us, if you do not prefer to save them:

```
rm -f /opt/mysql-connector-java-5.1.42.jar
```

```
rm -f /opt/sox-14.4.2.tar.gz
```

```
rm -f -R /opt/sox-14.4.2
```

And this is all.

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If you have some doubt or question, please raise it in the Apache OpenMeetings forums:

<http://openmeetings.apache.org/mail-lists.html>



Thank you.

Alvaro Bustos